

IN THE CLAIMS:

The following claims are pending:

1.-11. (Cancelled)

12. (Previously Presented) A method, comprising:

transmitting a digital signal from a transmitting end to a receiving end of a radio system;

receiving said digital signal at the receiving end;

setting an initial value of transmission power so that no pseudo errors are detected, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

monitoring pseudo error occurrence in the received signal at the receiving end;

decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition; and

increasing the transmission power by a predetermined amount when the pseudo error occurrence in the error-free reception fulfills the predetermined condition.

13. (Previously Presented) The method as claimed in claim 12, further comprising:

fulfilling the predetermined condition by detecting the pseudo error.

14. (Previously Presented) The method as claimed in claim 12, further comprising:

fulfilling the predetermined condition by detecting a second pseudo error within a predetermined time interval after the last pseudo error.

15. (Previously Presented) The method as claimed in claim 12, further comprising:

fulfilling the predetermined condition by detecting a predetermined number of pseudo errors within a predetermined time interval.

16. (Previously Presented) The method as claimed in claim 12, further comprising:

increasing the transmission power immediately when the pseudo error is detected.

17. (Previously Presented) The method as claimed in claim 12, wherein the decreasing the transmission power comprises decreasing the transmission power in predetermined steps for a predetermined time period at each step.

18. (Previously Presented) The method as claimed in claim 17, further comprising:

configuring the predetermined step to be 1 dB.

19. (Previously Presented) The method as claimed in claim 12, further comprising:

adjusting the transmission power after the set-up of the radio system to the initial value high enough so that no pseudo errors are detected at the receiving end;
decreasing the transmission power until a first pseudo error is detected;
increasing the transmission power in response to the detected pseudo error;
and

jumping to the decreasing the transmission power until the first pseudo error is detected when no pseudo errors are detected during a predetermined time period after the transmission power has been increased in the increasing the transmission power in response to the detected error.

20. (Previously Presented) The method as claimed in claim 12, further comprising:

configuring the predetermined amount for the increasing the transmission power to be 1 or 2 dB.

21. (Previously Presented) The method as claimed in claim 12, further comprising:

using forward error correction in the transmitted signal;

decoding the signal at the receiving end using a forward error correction decoder; and

interpreting the corrections made by the forward error correction decoder as pseudo errors.

22. (Previously Presented) The method as claimed in claim 12, further comprising:

using, at the receiving end, a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred.

23. (Previously Presented) The method as claimed in claim 12, further comprising:

monitoring the rate of actual errors at the receiving end; and

increasing the transmission power temporarily to the maximum transmission power when a predetermined error rate threshold is exceeded.

24. (Previously Presented) A system, comprising:

at a receiving end, a controller configured to monitor pseudo error occurrence in a received signal and to produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur; and

at a transmitting end, an adjuster configured to adjust transmission power responsive to said control signal by decreasing the transmission power when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

25. (Previously Presented) The system as claimed in claim 24, wherein said controller includes a forward error correction decoder configured to decode a forward error correction coded signal and configured to detect pseudo errors.

26. (Previously Presented) The system as claimed in claim 24, wherein said controller includes a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether the pseudo error has occurred.

27. (Previously Presented) An apparatus, comprising:

a receiver, configured to monitor pseudo error occurrence in a received signal,

produce a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, and

wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

28. (Previously Presented) An apparatus, comprising:

a power controller configured to adjust transmission power responsive to a control signal,

wherein the control signal is configured to indicate when pseudo errors are detected in a receiver and when pseudo error occurrence in the receiver is below a predetermined condition for an error-free reception,

wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur, and

wherein the radio transmitter is configured to adjust transmission power by decreasing the transmission power when the pseudo error occurrence does not fulfill the

predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

29. (Previously Presented) An apparatus, comprising:

a controller configured to set an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of a radio link system, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur; and

adjust the transmission power responsive to a power control message received in the controller by decreasing the transmission power when pseudo error occurrence in an error-free reception does not fulfill a predetermined condition and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition, wherein the power control message is based on information on pseudo errors detected in the received signal in the receiving end and provides indication whether pseudo error occurrence in an error-free reception fulfills the predetermined condition.

30. (Previously Presented) An apparatus, comprising:

a controller, configured to produce and send a power control message based on information on pseudo errors detected in a received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition, and

wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

31.-32. (Cancelled)

33. (Previously Presented) A method, comprising:

 sending a digital signal;

 setting an initial value of transmission power so that no pseudo errors are detected in a received signal in a receiving end of a radio link system, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

 receiving a power control message, which is based on information on pseudo errors detected in the received signal in the receiving end and indicating whether pseudo error occurrence in an error-free reception is below a predetermined condition;

decreasing the transmission power from the initial value when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition; and

increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

34. (Previously Presented) A method, comprising:

receiving a digital signal;

monitoring pseudo error occurrence in the received signal, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

producing a power control message based on information on pseudo errors detected in the received signal and indicating whether pseudo error occurrence in an error-free reception fulfills a predetermined condition; and

sending the power control message to a transmitting end of a radio link system.

35. (Previously Presented) An apparatus, comprising:

a transmitter configured to output a corrected bit stream, wherein the corrected bit stream is obtained by removing redundancy from a received bit stream; and

an error transmitter configured to output an error signal indicating corrections made by the apparatus to obtain the corrected bit stream, wherein the error signal provides information for producing a control signal, the control signal indicating whether pseudo errors are detected in a received signal and whether the pseudo error occurrence in an error-free reception fulfills a predetermined condition, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur.

36. (Previously Presented) A method, comprising:

transmitting a digital signal from a transmitting end to a receiving end of a radio system;

receiving said digital signal at the receiving end;

setting an initial value of the transmission power so that no pseudo errors are detected, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur;

monitoring pseudo error occurrence in the received signal at the receiving end;

decreasing the transmission power gradually from the initial value at the transmission end when the pseudo error occurrence in an error-free reception does not fulfill a predetermined condition;

increasing the transmission power by a predetermined amount when the pseudo error occurrence in the error-free reception fulfills the predetermined condition;

monitoring occurrence of actual errors in the received signal at the receiving end; and

overriding transmission power control based on monitoring of occurrence of pseudo errors by increasing transmission power when actual errors are observed.

37. (Previously Presented) A system, comprising:

at a receiving end, monitoring means for monitoring pseudo error occurrence in a received signal and producing a control signal indicating when pseudo errors are detected and when the pseudo error occurrence in an error-free reception is below a predetermined condition, wherein a pseudo error is defined as an instant when a right bit or symbol decision was made, but a margin for the right bit or symbol decision was smaller than a limit value so that an actual error did not occur; and

at a transmitting end, adjusting means for adjusting transmission power responsive to said control signal by decreasing the transmission power when the pseudo error occurrence in the error-free reception does not fulfill the predetermined condition

and by increasing the transmission power when the pseudo error occurrence fulfills the predetermined condition.

38. (Previously Presented) An apparatus, comprising:

a controller configured to monitor the occurrence of pseudo errors in transmissions received from a transmitting end, a pseudo error defining an instant when a right bit or symbol decision is made but a margin for the right bit or symbol decision is smaller than a limit value so that an actual error did not occur, and to produce a control signal indicating whether a pseudo error has been detected, and

a generator configured to generate power control messages based on control signals received from said controller, which power control messages are to be transmitted to said transmitting end, and wherein the power control messages are generated such that transmission power at said transmitting end is decreased until the pseudo error occurrence is above a predetermined level, and is increased when the pseudo error occurrence is above the predetermined level.

39. (Previously Presented) An apparatus as claimed in claim 38, wherein said controller includes a forward error correction decoder configured to decode a forward error correction coded signal and to detect pseudo errors.

40. (Previously Presented) An apparatus as claimed in claim 38, wherein said controller includes a demodulator provided with a first set of thresholds for making a decision on a received symbol and a second set of thresholds for making a decision on whether a pseudo error has occurred.

41. (Previously Presented) An apparatus as claimed in claim 38, wherein the predetermined level is the detection of a pseudo error.

42. (Previously Presented) An apparatus as claimed in claim 38, wherein the predetermined level comprises detecting a second pseudo error within a predetermined time interval after detection of a first pseudo error.

43. (Previously Presented) An apparatus as claimed in claim 38, wherein the predetermined level comprises detecting a predetermined number of pseudo errors within a predetermined time interval.

44. (Previously Presented) A method, comprising:
monitoring the occurrence of pseudo errors in transmissions received from a transmitting end, a pseudo error defining an instant when a right bit or symbol decision is made but a margin for the right bit or symbol decision is smaller than a limit value so

that an actual error did not occur, and producing a control signal indicating whether a pseudo error has been detected; and

generating power control messages based on control signals received, which power control messages are for transmitting to said transmitting end, and wherein the power control messages are generated such that transmission power at said transmitting end is decreased until the pseudo error occurrence is above a predetermined level, and is increased when the pseudo error occurrence is above the predetermined level.

45. (Previously Presented) A method as claimed in claim 44, wherein the predetermined level is the detection of a pseudo error.

46. (Previously Presented) A method as claimed in claim 44, wherein the predetermined level comprises detecting a second pseudo error within a predetermined time interval after detection of a first pseudo error.

47. (Previously Presented) A method as claimed in claim 44, wherein the predetermined level comprises detecting a predetermined number of pseudo errors within a predetermined time interval.

48. (Previously Presented) An apparatus, comprising:

a controller configured to control transmission power at a transmitting end based on power control messages,

wherein the power control messages are generated based on control signals indicating whether a pseudo error has been detected in transmissions received from the transmitting end at a receiving end, a pseudo error defining an instant when a right bit or symbol decision is made but a margin for the right bit or symbol decision is smaller than a limit value so that an actual error did not occur, and

wherein the power control messages are generated such that transmission power at said transmitting end is decreased until the pseudo error occurrence is above a predetermined level, and is increased when the pseudo error occurrence is above the predetermined level.

49. (Previously Presented) An apparatus as claimed in claim 48, wherein the predetermined level is the detection of a pseudo error.

50. (Previously Presented) An apparatus as claimed in claim 48, wherein the predetermined level comprises detecting a second pseudo error within a predetermined time interval after detection of a first pseudo error.

51. (Previously Presented) An apparatus as claimed in claim 48, wherein the predetermined level comprises detecting a predetermined number of pseudo errors within a predetermined time interval.

52. (Previously Presented) A method, comprising:

controlling transmission power at a transmitting end based on power control messages,

wherein the power control messages are generated based on control signals indicating whether a pseudo error has been detected in transmissions received from the transmitting end at a receiving end, a pseudo error defining an instant when a right bit or symbol decision is made but a margin for the right bit or symbol decision is smaller than a limit value so that an actual error did not occur; and

wherein the power control messages are generated such that transmission power at said transmitting end is decreased until the pseudo error occurrence is above a predetermined level, and is increased when the pseudo error occurrence is above the predetermined level.

53. (Previously Presented) A method as claimed in claim 52, wherein the predetermined level is the detection of a pseudo error.

54. (Previously Presented) A method as claimed in claim 52, wherein the predetermined level comprises detecting a second pseudo error within a predetermined time interval after detection of a first pseudo error.

55. (Previously Presented) A method as claimed in claim 52, wherein the predetermined level comprises detecting a predetermined number of pseudo errors within a predetermined time interval.